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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,945	06/27/2003	Hee-Gyoun Lee	1014-SP219	8700

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EXAMINER

COOKE, COLLEEN P

ART UNIT PAPER NUMBER

1754

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,945	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Colleen P Cooke	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 1-33 and 43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-43 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/27/03</u> . | 6) <input type="checkbox"/> Other: _____  |

*Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-33, drawn to a superconducting article, classified in class 428, subclass 701.
- II. Claims 34-42, drawn to a process of making a superconductor, classified in class 427, subclass 523.
- III. Claim 43, drawn to a process of using a superconductor, classified in class 405, subclass 154.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by another method, that is the stabilizer layer may be made by any method including chemical vapor deposition, laminating, etc.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the superconducting article need not be made into a power cable and thus can be used in a different process.

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Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jeffrey Abel on 6/15/04 a provisional election was made with traverse to prosecute the invention of Group II, claims 34-42. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-33 and 43 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 33-38 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritzemeier et al. (20020144838), in view of Fujikami et al. (6271474).

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Fritzemeier et al. teaches (see Figure 1A generally) making a superconducting tape by providing a substrate (12a), depositing a buffer layer (14a) on the substrate (page 11, paragraph 0120), depositing a superconductor layer over the buffer layer (page 11, paragraph 0121), and further depositing a “stabilizer” layer (18a) which may be copper over the superconductor layer (page 11, paragraph 0122). Fritzemeier et al. is silent as to by what process the “stabilizer” layer is deposited, and therefore does not teach that it is electroplated.

Fujikami et al. teaches a superconducting wire having a “stabilizer” layer which is preferably copper and is deposited by electroplating (Column 8, lines 3-12). Further, Fujikami et al. teaches in one specific example that the electroplating is performed by passing the wire through aqueous copper sulfate solution using the superconducting wire as the cathode and a provided plate as the anode (Column 23, lines 15-22).

Regarding claims 40-42, the electroplating process would necessarily deposit the “stabilizer” layer of copper onto the entire exposed surface of the superconductor unless measures were taken otherwise. In addition, Fujikami et al. shows with regards to the example referred to above, in Column 23, lines 15-22 and 27-35, that the layer 163 is deposited on all exposed surfaces of the superconductor in Figure 16. Although this example depicts a wire having circular cross-section, the result of the process would be the same on a tape of rectangular cross-section.

It would have been obvious to modify the method of making a superconductor by electroplating the copper onto the superconductor because Fujikami et al. teaches this process is preferred (Column 8, lines 8-10 specifically).

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Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fritzemeier et al. (20020144838) in view of Fujikami et al. (6271474) as applied to claims 34 and 35 above, and further in view of either of Moehle et al. (6187166) or Hoover et al. (4560445).

Although Fritzemeier et al. and Fujikami et al. teach the method of making the superconductor as described with respect to claims 34 and 35 above, neither reference specifically teaches the use of a reel-to-reel electroplating process to deposit the copper onto the superconductor.

Either one of Moehle et al. or Hoover et al. teaches performing electroplating of copper onto a substrate by the reel-to-reel system of electroplating (see Column 2, lines 38-53 of Moehle et al. or Column 15, lines 22-30).

It would have been obvious to modify the method of making a superconductor by electroplating the copper using a reel-to-reel electroplating because either of Moehle et al. or Hoover et al. teaches that this is a method to be used for electroplating copper, and further with regards to Moehle et al. that this method is further of use for electroplating a continuous length article which will constitute the cathode in the process (Column 2, lines 38-39 specifically).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colleen P Cooke whose telephone number is 571-272-1170. She can normally be reached Mon.-Thurs. 7am-5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Stan Silverman can be reached at 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Colleen P. Cooke". The signature is written in a cursive, flowing style.

Colleen P Cooke  
Examiner  
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